Space Weather Forecast

Issued on Wednesday, 19 June 2024 at 13:02 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Occasional Moderate class flares likely (R1-R2 radio blackouts).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate with two low level Moderate flares observed, the largest flare from the large, complex sunspot just west of the south centre disc. There are five sunspot regions visible. Aside from the region mentioned above, there are also two other moderately sized sunspots just west of the centre disc, however these are smaller and simpler. Two regions have rotated over the western limb in recent hours and another region will soon follow.

A CME (coronal mass ejection) occurred in the northeast of the disc at 19/0918UTC and could potentially have an Earth directed component. However, analysis of this CME is pending, awaiting on relevant coronagraph imagery. Other than this there were no Earth-directed CMEs in the past 24 hours.

Solar Wind / Geomagnetic Activity: Fast solar wind influence from a coronal hole was observed, with solar winds elevated between 550-600 km/s until around 18/1500UTC, a declining trend was then observed falling to current values of 520km/s. Interplanetary Magnetic Field (IMF) was at weak levels. The important north-south component was weakly variable. Geomagnetic activity has been Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) has remained at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate activity is expected with further Moderate class flares likely and a slight chance of isolated Strong class flares. These most likely from the large sunspot region just west of the south-centre disc.

Solar Wind / Geomagnetic Activity: A CME (coronal mass ejection) which occurred in the northwest of the disc at 19/0918 UTC is waiting on relevant coronagraph imagery for analysis. Other than this there are no Earth-directed CMEs, and current elevated solar winds due to CH45/+ are expected to gradually ease through the next couple of days. There is a chance of a further enhancement later on day 3 (21 Jun), from any influence of CH46/-, however this is low confidence.

Mainly Quiet to Unsettled geomagnetic activity is expected. There is a chance of isolated Active intervals with either of the fast wind enhancements, mainly early day 1 (19 Jun) or later day 3 and into day 4 (21 and 22 Jun).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to be at background but with a slight chance of rising given the occurrence of any notable flares. This gives a slight chance of reaching the Minor Solar radiation Storm level (S1).

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	70	70	70	70
Very Active	R3 to R5 X	No	15	15	15	15

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	15	15	15
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.